

KORABEL' SHCHIKOV, Nikolay Ivanovich, kand.tekhn.nauk; KUT'IN, L.I.,  
retsenzent; SHIMKO, K.N., retsenzent; OVCHINNIKOV, A.I.,  
red.; SHLENNIKOVA, Z.V., red.izd-va; YERMAKOVA, T.T.,  
tekhn.red.

[Steam distribution in marine steam engines] Paroraspredelenie  
sudovykh parovykh mashin. Moskva, Izd-vo "Technol transport,"  
1959. 284 p. (MIRA 13:2)  
(Boilers, Marine) (Marine engines)

ANTONOVICH, Sergey Aleksandrovich, kand.tekhn.nauk; NOVIKOV, Viktor Vasil'yevich, inzh.; RENSKIY, Nikolay Mikhaylovich, inzh.; FOMKINSKIY, Leonid Ivanovich, inzh.; SHIMKO, Konstantin Nikolayevich, kand.tekhn.nauk. Prinimal uchastiyu SMANTSER, A.I., inzh. AL'BANOV, V.M., inzh., nauchnyy red.; LAKHANIN, V.V., prof., doktor tekhn.nauk, retsenzent; KULIKOVSKIY, P.P., kand.tekhn.nauk, retsenzent [deceased]; STEPANYUK, Ye.I., kand.tekhn.nauk, retsenzent; PAVLOV, A.V., inzh., retsenzent; PETROV, M.D., inzh., retsenzent; ROMANOV, P.A., inzh., retsenzent; SOBOLEV, P.I., inzh., retsenzent; VITASHKINA, S.A., red.izd-va; YERMAKOVA, T.T., tekhn.red.; VOLCHOV, K.M., tekhn.red.

[Handbook for marine heat engineers] Spravochnik sudovogo teplotekhnika. Sost. S.A.Antonovich i dr. Leningrad, Izd-vo "Rechnoi transport," Leningr. otd-nie, 1960. 679 p. (MIRA 14:3)  
(Marine engineering) (Heat engineering)

LEONT'YEVSKIY, Yevgeniy Sergeyevich; RENSKIY, Nikolay Mikhaylovich;  
KRYLOV, V.I., retsenzent; SHIMKO, K.N., retsenzent; GLADYSHEV,  
V.F., retsenzent; OSIPOV, L.L., retsenzent; TAREYEV, V.M.,  
prof., doktor tekhn. nauk, red.; VITASHKINA, S.A., red. izd-va;  
BOGDROVA, V.A., tekhn. red.

[Marine engineering handbook for the operation of motorships]  
Spravochnik dlja mekhanika i motorista teplokhoda. Sost. E.S.  
Leont'evskii i N.M.Renskii. Moskva, Izd-vo "Rechnoi transport,"  
1961. 558 p.  
(Marine engineering) (Motorships)

SYRMAY, A.G., nauchnyy sotr.; OBERMEYSTER, A.M., nauchnyy sotr.;  
IRONMAN, A.I., nauchnyy sotr.; SHIMKO, K.N., kand. tekhn.  
nauk; PARAKHOMSKIY, B.M., kand. ekon. nauk. Prinimali ucha-  
stiye: ZHURILOV, V.I., nauchnyy sotr.; ZUBKOV, M.I., nauchnyy  
sotr.; SHVARTS, G.L., nauchnyy sotr.; MIKHEYEV, A.P., doktor  
tekhn. nauk, prof., otd. red.; BYKOV, I.K., red. izd-va;  
DOROKHINA, I., tekhn. red.

[Water and air transportation in capitalist countries: trends in  
the development of equipment] Vodnyi i vozдушnyi transport kapita-  
listicheskikh stran; tendentsii razvitiia tekhnicheskikh sredstv.  
Moskva, Izd-vo Akad.nauk SSSR, 1961. 350 p. (MIRA 15:1)

1. Akademiya nauk SSSR. Institut kompleksnykh transportnykh pro-  
blem.

(Merchant marine) (Aeronautics, Commercial)

SOV/170-59-6-10/20

24(8)

AUTHORS: Shimko, N.G., Yushkov, P.P.

TITLE: A Hankel Final Integral Transformation

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 6, pp 72-79 (USSR)

ABSTRACT: For final integral transformations Sneddon [Refs 2, 3] introduced kernels, which include Bessel functions, in order to study the physical state of bodies possessing cylindrical symmetry. The transformations of this kind he denoted as Hankel final integral transformations. A general method for solving certain boundary-value problems with separable variables was proposed by G.A. Grinberg [Refs 6, 7]. The authors describe three cases of Hankel final integral transformations which were considered by Sneddon and bring them to the form which could be applied for solving the problems on thermal state of a hollow cylinder. The inner surface of this cylinder is maintained at a given temperature, and the outer surface is thermally insulated. The Hankel final integral transformation is then expressed by Formula 3.13 and the corresponding conversion formula is 3.14. This integral transformation is used in the solution of the problem of heat conductivity for a

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IVANOV, A. V. ; SHIMKO, N. G.

Problem on heat conductivity for a lamellarly homogenous medium.  
Trudy Inst. energ. AN BSSR no. 9:77-91 '59. (MIR 13:10)  
(Heat---Conduction)

64259

11.9200  
24.5200 220712507 2615  
10.4100

S/170/60/003/010/004/023  
B019/B054

AUTHOR: Shimko, N. G.

TITLE: The Finite Hankel Integral Transform for a Hollow Cylinder

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 10,  
pp. 39 - 46

TEXT: The determination of the temperature of an infinitely long, hollow cylinder in the presence of a heat source leads to the differential equation (1):  $\frac{\partial t}{\partial \tau} = a(\frac{\partial^2 t}{\partial r^2} + \frac{\partial t}{\partial r}) + F(r, \tau)$ , where  $a$ , the thermal diffusivity coefficient, and  $F(r, \tau)$  are given. In an extensive expansion with the aid of the finite Hankel integral transform

$H_0 \left[ f(r) \right] = \tilde{f}(p) = \int_{r_0}^R r f(r) W(pr) dr$  (5), the author finds the function  $t(r, \tau)$  for the initial and boundary conditions (2) - (4).  $W(pr)$  is determined from the integral equation (6):

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84259

The Finite Hankel Integral Transform for a Hollow Cylinder

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$\int_{r_0}^R r(\partial^2 t / \partial r^2 + \partial t / \partial r) W(pr) dr = -p^2 t(p, \tau) + K(p, \tau)$ . (5) is exactly formulated, and assumes the form of (24):

$H_o[f(r)] = \bar{f}(p_k) = \int_{r_0}^R r f(r) V_o(p_k r) dr$ , where  $V_o$  is determined from formula (13). The author obtains the conversion formula (25), whose solution (31) reads:

$$t(\tau, \tau) = \frac{\pi^2}{2} \sum_{k=1}^{\infty} p_k^2 \left[ \beta_2 J_0(p_k R) - \alpha_2 p_k J_1(p_k R) \right]^2 t(p_k, \tau) V_o(p_k, \tau)$$

$$X \left\{ (\alpha_2^2 p_k^2 + \beta_2^2) \left[ \beta_1 J_0(p_k r_o) - \alpha_1 p_k J_1(p_k r_o) \right]^2 - (\alpha_1^2 p_k^2 + \beta_1^2) \left[ \beta_2 J_0(p_k R) - \alpha_2 p_k J_1(p_k R) \right]^2 \right\}^{-1}$$

There are 4 references: 2 Soviet, 1 British, and 1 German.

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84759

The Finite Hankel Integral Transform for a  
Hollow Cylinder

S/170/60/003/010/004/023  
B019/B054

ASSOCIATION: Politekhnicheskiy institut, g. Voronezh (Polytechnic  
Institute, Voronezh)

SUBMITTED: September 22, 1959

X

Card 3/3

SHIMKO, N. G.

"The Heat Conductivity Problem for Uniformly Laminated  
Cylinders With an Incomplete Contact."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR,  
June 1961.

SHVIGEL, R. I.

"The contact problem for a system of heat- and mass-transfer equations."

report submitted for 2nd All-Union Conf' on Heat & Mass Transfer, Minsk,  
4-12 May 1984.

Voronezh Polytechnical Inst.

L 41778-65

ACCESSION NR: AP5005766

8/0170/65/008/001/0073/0078  
4

B

AUTHOR: Cherpakov, P. V.; Shimko, N. G.

TITLE: On the regular thermal regime in a multi-layer medium

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 8, no. 1, 1965, 72-78

TOPIC TAGS: multilayer medium, thermal regime, regular thermal regime, interlayer contact

ABSTRACT: The regular thermal regime in a multi-layer medium is considered for both perfect and imperfect contact between the layers. Each layer is assumed to have a constant coefficient of temperature conductivity, and the general solution is made up of the individual solutions of the thermal conductivity equation for each layer separately, with suitable boundary conditions. The solution is obtained in the form of a series, in which the first terms is exponential and corresponds to the regular regime. The case of imperfect contact is considered first for two media with free heat exchange on the outer surfaces and imperfect contact at the separation boundary. An eigenfunction expansion is obtained for this case by an integral-transform method, and an expression is obtained for the time neces-

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ACCESSION NR: AP5005766

sary for the regular regime to set in. Certain inequalities are derived between the boundary functions and the source functions. The possibility of employing experimental methods to investigate the regular regime in a multi-layer medium is discussed. Orig. art. has: 25 formulas.

ASSOCIATION: Gosudarstvenny universitet, Voronezh (Voronezh State University)

SUBMITTED: 14Apr64

ENCL: 00

SUB CODE: ID

NR REP SOV: 006

OTHER: 001 ..

*me*  
Card 2/2

ЧЕРНЯКОВ, П.А., СИМЯКОВ, Н.Г.

Regular thermal regime in a multilayer medium. Inzh. fiz. zhur., 2 no.1, 72-78 Ja 1955. (MIFI A 13.0)

L. Gospodarstvennyy universitet, Voronezh.

POLOVENKO, I.S., kandidat sel'skokhozyaystvennykh nauk; SHIMKO, N.I..  
agronom-ekonovist; KALASHNIKOVA, V.S., redaktor; VESKOVA, Ye.I.,  
tekhnicheskiy redaktor

[The new planning system in action] Novyi poriadok planirovaniia v  
deistvii. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 331 p. (MIRA 9:11)  
(Agricultural administration)

POLOVENKO, I.S., kand. ekon. nauk.; SHIMKO, N.I., agronom-ekonomist.;  
ARTYKOV, A., BORISOV, V.A., GONCHAROV, A.I., KLOTS, Ye.A., SPERANSKIY,  
V.Z., SHAPIRO, L.L.; KALASHNIKOVA, V.S., red.; BALLOD, A.I., tekhn. red.

[Experience in introducing a new procedure in planning] Opyt  
vnedreniya novogo poriadka planitovaniia. Moskva, Gos. izd-vo  
sel'khoz. lit-ry, 1958. 308 p. (MIRA 11:11)  
(Agriculture)

SHIMKO, N.I., POLOVENKO, I.S.

[Overtake and surpass the U.S.A. in the output of livestock products] Dognat' i peregnat' SSSR po proizvodstvu produktov zhivotnovodstva. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1958. 469 p.  
(MIRA 11:10)  
(Stock and stockbreeding)

HUTSKIY, A.I.; LEONKOV, A.M.; GEYLER, L.B.; SLEPYAN, Ya.Yu.; MOSEYEV, I.V.;  
SOBOLEV, A.I.; TINYAKOV, N.A.; VOLKOV, N.P.; BOTVINNIK, Ya.Ye.;  
BARABANOV, M.Ye.; BRAZGOVKA, V.A.; POKLIS, G.B.; KUZOVNIKOVA,  
Ye.A.; KUZ'MIN, Yu.P.; SHIMKO, N.I.; PALLADIY, N.L.; KHUTSKIY, G.I.

G.I. Dobkin; obituary. Izv. vys. ucheb. zav.: energ. no.4:128 Ap '58.  
(Dobkin, Grigorii Izrailevich, 1892-1958) (MIRA 11:6)

SHIMKO, N.I.; POLOVENKO, I.S., kand.ekonom.nauk, starshiy nauchnyy  
sotrudnik; BANNIKOV, N.A., red.; TERESHCHENKO, N.I., red.;  
ZUBRILINA, Z.P., tekhn.red.

[Overtake and surpass the United States in the output of  
livestock products] Dognat' i peregnat' SSSR po proizvodstvu  
produktov zhivotnovodstva. Izd.2., dop. i perer. Moskva, Gos.  
izd-vo sel'khoz.lit-ry, 1959. 500 p. (MIRA 12:11)

1. Rukovoditel' otdela opornykh punktov i korrespondentskoy seti  
Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki  
sel'skogo khozyaystva (for Shimko).  
(Stock and stockbreeding)

TULUPNIKOV, L.A.; SOLOV'IEV, A.V.; BATCOVA, N.T.; GAVRILOV, V.I., kand. ekonom. nauk; SHIMKO, N.I.; POLOVENKO, I.S., kand. ekonom. nauk; POTAPOV, Kh. Ye., red.; OVCHINNIKOV, N.G., red.; PONOMAREVA, A.A., tekhn. red.

[Problems pertaining to long-range planning and systems of management on collective and state farms] Voprosy perspektivnogo planirovaniia i sistemy vedeniya khozisistva v kolkhozakh i sovkhozakh. Moskva, Gosplanizdat, 1960. 681 p.

(MIRA 14:3)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut ekonomiki sel'skogo khozyaystva. 2. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina; direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for Tulupnikov). 3. Zamestitel' direktora Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for Gavrilov). 4. Rukovoditel' otdela Vsesoyuznogo nauchno-issledovatel'skogo instituta ekonomiki sel'skogo khozyaystva (for Polovenko).

(Collective farms) (State farms)

KHLUDENOV, Aleksandr Ivanovich, kand. ekon. nauk; SHIMKO, Nikolay....  
Ivanovich, kand. ekon. nauk; LEONOVА, T.S., red.;  
NAZAROVА, A.S., tekhn. red.

[The piecework-bonus wage system on state farms; from the  
practice of state farms in Moscow Province] Akkordno-  
premial'naia oplata truda v sovkhozakh; iz opyta sovkho-  
zov Moskovskoi oblasti. Moskva, Izd-vo "Znanie," 1962.  
39 p. (Novoe v zhizni, nauke, tekhnike. V Seriia: Sel'-  
skoe khoziaistvo, no.20) (MIRA 15:10)  
(Moscow Province--Agricultural wages)

ACCESSION NR: AP4039632

S/0140/64/000/003/0184/0187

AUTHOR: Shimko, V. I. (Rostov-on-Don)

TITLE: On the question of the construction of nonrigid closed ribbed surfaces of rotation

SOURCE: IVUZ. Matematika, no. 3, 1964, 184-187

TOPIC TAGS: surface geometry, ribbed surface, operations research, homogeneous equation, surface generating function

ABSTRACT: The author proved the existence of nonrigid closed ribbed surfaces of rotation having a plane of symmetry perpendicular to the axis and admitting two linearly independent infinitely small curves for which the meridian of each surface consists of four segments. Denoting the surface meridian as  $r = r(u)$ , the authordefined  $r(u)$  as

$$r(u) = \begin{cases} a_1 u, & u \in [0; a_1], \\ a_2(u - a_1) + a_1 a_2, & u \in [a_1; a_1 + a_2], \\ a_3(u - a_1 - a_2) + a_1 a_2 + a_2 a_3, & u \in [a_1 + a_2; a_1 + a_2 + a_3], \\ a_4(u - a_1 - a_2 - a_3) + a_1 a_2 + a_2 a_3 + a_3 a_4, & u \in [a_1 + a_2 + a_3; a_1 + a_2 + a_3 + a_4], \end{cases}$$

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ACCESSION NR: AP4039632

where  $a_i$  and  $\alpha_i$  satisfy the relationship

$$a_i \neq a_{i+1} \quad (i = 1, 2, 3); \quad \sum_{i=1}^4 a_i a_i > 0 \quad (i = 1, 2, 3); \quad \sum_{i=1}^4 a_i z_i = 0.$$

He defines the surface generating function  $\chi_k(u)$  as

$$\chi_k(u) = \begin{cases} A_{1,k} u, & u \in [0; a_1], \\ A_{2,k}(u - a_1) + A_{1,k} a_1, & u \in [a_1; a_1 + a_2], \\ A_{3,k}(u - a_1 - a_2) + A_{2,k} a_1 + A_{1,k} a_2, & u \in [a_1 + a_2; a_1 + a_2 + a_3], \\ A_{4,k}(u - a_1 - a_2 - a_3) + A_{3,k} a_1 + A_{2,k} a_2 + A_{1,k} a_3, & u \in [a_1 + a_2 + a_3; a_1 + a_2 + a_3 + a_4]. \end{cases}$$

where  $A_{i,k}$  ( $i = 1, 2, 3, 4$ ) are yet undetermined constants. Accounting for the initial problem conditions and definitions yielded the equation

$$(k^2 - 1)^2 a_2 a_3 (a_1 - a_2)(a_1 - a_3)(a_1 - a_4) - \\ (k^2 - 1) \{(a_2 - a_1)(a_2 a_1 + a_2 a_3)[a_1 a_1 + a_1 (a_1 + a_2 + a_3)] + \\ + a_3 a_1 (a_3 - a_1)(a_1 - a_3)(a_1 + a_2)\} + a_1 a_4 (a_1 a_1 + a_2 a_3) \times \\ \times (a_1 + a_2 + a_3 + a_4) = 0.$$

It is demonstrated how surface parameters can be selected so that two linearly

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ACCESSION NR: AP4039632

independent infinitely small curves are allowed according to the author's hypothesis. Two related theorems were proposed and proved: 1) If  $\alpha_2$  and  $a_2$  for some integer  $k \geq 2$  simultaneously satisfy any one of the systems of conditions:

- a)  $a_2 > \frac{k^2}{k^2 - 1}; a_2 = \frac{1}{\alpha_2 [(k^2 - 1) a_2 - k^2]}$
- b)  $a_2 > \frac{k^2}{k - 1}; a_2 = \frac{1}{(k^2 - 1) a_2 - k}$
- c)  $a_2 < 0; a_2 = \frac{1}{\alpha_2 [(k^2 - 1) a_2 - k^2]}$
- d)  $0 < a_2 < \frac{1}{k^2 - 1}; a_2 = \frac{1}{\alpha_2 [(k^2 - 1) a_2 - k^2]}$

then surface  $S_4$  is nonrigid ( $S_4$  is the ribbed surface of rotation whose plane of symmetry is perpendicular to the axis); and 2) if  $\alpha_2$  and  $a_2$  for some integers  $\lambda \geq 2$  and  $m > \lambda$  satisfy the conditions  $a_2 = \frac{m^2}{\lambda^2 - 1}; a_2 = \frac{\lambda^2 - 1}{m^2(m^2 - \lambda^2)}$ , then surface  $S_4$  is nonrigid and allows two linearly independent infinitely small curves. Numerical examples of application of both theorems are given. Orig. art. has: 12 equations.

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ACCESSION NR: AP4039632

ASSOCIATION: none

SUBMITTED: 17Mar62

SUB CODE: MA

NO REF Sov: 002

ENCL: 00

OTHER: 000

Card 4/4

L 4074-66 EWT(m)/EWP(i)/EWP(t)/EWP(b) IJP(c) JD/JG  
ACCESSION NR: AP5025395

UR/0181/65/007/010/3106/3108

36  
33  
B  
27

AUTHOR: Kovarskiy, V. Ya.; Shimko, V. I.

TITLE: Controlled generation of relaxation oscillations in n-type epitaxial silicon  
with a point contact

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3106-3108

TOPIC TAGS: silicon semiconductor, epitaxial growing, photosensitivity

ABSTRACT: Generation of relaxation oscillations is studied in a point contact on epitaxial layers of n-silicon grown by the chloride method on a p-silicon substrate. Epitaxial layers 15-30  $\mu$  in thickness were used with resistivities of 0.1 and 4.5  $\Omega\cdot\text{cm}$ , that of the substrate being 7.5  $\Omega\cdot\text{cm}$ . Vacuum vaporization was used for applying a ring-shaped ohmic contact (Au + 1% Sb) to the surface of the epitaxial film. The point contact—an electrolytically sharpened tungsten needle—was located in the central orifice of the ohmic contact. Current oscillations were generated on the negative section of the reverse branch of the current-voltage curve for the point contact. The frequency, amplitude, and shape of the oscillations remained constant in spite of variations in the load resistance and disconnection of the intermediate

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L 4074-66

ACCESSION NO: AP5025395

3

amplifier. In studying the nature of the generation process, provision was made for stabilizing generation and controlling the generated oscillations by bias of the film-substrate potential barrier. Back bias voltage was applied between the substrate and the ohmic contact and the signal was taken off from a load connected between the point contact and the p-silicon. Thus, the critical voltage necessary for generation could be maintained automatically. The pulse duration could be varied from several dozen to a few usec by varying the bias voltage in the 5-20 and 17-30 volt ranges for layers with resistivities of 0.01 and 4.5  $\Omega\text{-cm}$  respectively. The threshold voltage for emission was reduced by white-light illumination on the surface of the epitaxial layer. At a certain maximum light intensity, the oscillations were cut off. A relationship was observed between the period of the oscillations and the energy of the incident radiation. The generation of relaxation oscillations in epitaxial silicon is attributed to excitation of impurity centers which reduces the surface potential barrier of the point contact with subsequent capture of current carriers by surface states and a resultant increase in the potential barrier. The density of the surface states in the vicinity of the point contact was found to be of the order of  $10^{16}$   $\text{cm}^{-2}$  from measurements of the oscillation period as a function of the external capacitance connected to the point junction. "In conclusion, the authors are grateful to K. I. Britsyn for constant interest in the work." Orig. art. has: 2 figures. #4.55 [14]

Card 2/3

L 4074-66

ACCESSION NR: AP5025395

O.

ASSOCIATION: none

SUBMITTED: 28Apr65

ENCL: 00

SUB CODE: SS

NO REF SOV: 003

OTHER: 002

ATD PRESS: 4127

BUK  
Card 3/3

L 2211-66 EWT(1)/EWT(m)/EWP(1)/T/EWP(t)/EWP(b)/EWA(h) IJP(s) JD/AT  
ACCESSION NR: AP5017347 UR/0181/65/007/007/2264/2265

AUTHOR: Kovarskiy, V. Ya.; Shinko, V. I.

TITLE: Measurement of the distribution of potential in epitaxial p-n structures  
by the moving-light-spot method

SOURCE: Fizika tverdogo tala, v. 7, no. 7, 1965, 2264-2265

TOPIC TAGS: pn junction, epitaxial growing, electric potential

ABSTRACT: The authors propose a simple procedure for determining the depth of an epitaxial p-n junction and its potential structure, by using the moving-light-spot method (G. Adam, Physica v. 20, 1037, 1954). The measurement technique is described briefly. The measurements were made on silicon epitaxial layers grown by the chloride method on substrates of silicon of opposite type of conductivity. The layers were 10--50  $\mu$  thick. The potential distribution in the film was obtained by measuring the dependence of the amplitude of the photo-response on the collector as a function of the inverse bias applied between the collector and a ring electrode. The depth of the epitaxial layer could be determined without a ring contact by plotting the amplitude of the collector photo-response as a function of the voltage applied between the collector and the substrate. The procedure was verified for several samples and yielded satisfactory agreement with results ob-

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L 2211-66

ACCESSION NR: AP5017347

tained with an electron microscope. "The authors thank K. I. Britsyn for continuous interest in the work, Ye. A. Antonova for supplying the samples, and L. A. Panin for the electron-microscope measurements." Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 10Mar65

ENCL: 00

SUB CODE: 88

MR REP. SOV: 001

OTHER: 003

Card 2/2

DP

SEDAKOV, N.N.; SHIMKO, V.M.

Leading detachment of power engineering construction workers.  
Energ. stroi. no.37:5-7 '63. (MIRA 17:6)

1. Sekretar' partiynogo byuro Pridneprovskoy gosudarstvennoy  
rayonnoy elektrostantsii (for Sedakov). 2. Sekretar' komiteta  
Vsesoyuznogo Leninskogo kommunisticheskogo soyuza molodezhi Pri-  
dnepranskoy gosudarstvennoy rayonnoy elektrostantsii (for  
Shimko).

SHIMKO, V.V.

Novocaine block in some diseases of the upper respiratory tract.  
Vest.oto-rin. 18 no.5:122-123 S-0 '56. (MLRA 9:11)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - dotsent N.T. Yevstaf'yev) Belorusskogo instituta usovershenstvovaniya vrachey.  
(RESPIRATORY ORGANS--DISEASES)  
(NOVOCAINE)

St. P. U. . . . assistant; RUDOVSKII, IA. L., klinicheskiy ordinator

Treatment of chronic purulent otitis of the middle ear.  
Zdrav. Belor. 6 no. 7:40-42 Je '60. (MIRA 13:8)

1. Iz kafedry ukha, gorla, nosa Instituta usovershenstvovaniya  
vrachey.  
(EAR--DISEASES)

SHIMKO, V.V.

Otogenous diseases of the cerebellum. Zdrav. Belor. 6 no.9:39-40  
S '60. (MIRA 13:9)

1. Iz kliniki ukha, nosa i gorla (zaveduyushchiy kafedroy - dotsent  
N.T. Yefstaf'yev) Instituta usovershenstvovaniya vrachey.  
(CEREBELLUM—ABSCESS)

SHIMO, V.V.; PODOKSHIK, Ya.L.

Otogenic brain abscesses. Zdrav.Bel. no.3:36-38 '62.

(MIRA 15:5)

1. Iz kafedry ukha, gorla i nosa (zaveduyushchiy kafedroy - dotsent N.T. Yevstaf'yev) Belorusskogo instituta usovershenstvovaniya vrachey (direktor - dotsent N.Ye. Savchenko).  
(BRAIN--ABSCESS) (EAR--DISEASES)

SHIMKO, YA, D., (Assistant Veterinary Surgeon, Timashev Raion, Krashodar Krai)

Treatment of gangrene with large penicillin

Vete inariya vol. 38, no. 10, October 1961, pp. 81-89

SHIMKO, Ye. M.

166T26

USSR/Fuel - Coke, By-Products of

Jul 50

"Accelerated Method for Determination of the Softening Temperature of Pitch," Ye. M. Shimko, Dnepro-  
zerzhinsk Coke By-Products Plant

"Zavod Lab" Vol XVI, No 7, pp 881-882

Suggests new method of writing on a heated metal plate with pitch. Two methods developed for heating plate: with hot water and with steam. Gives comparative data on softening temperature of pitch, obtained by standard method and by new method.

166T26

AUTHOR: Shimko, Ye.M.

68-12-18/25

TITLE: On the Problem of DephenoLising Effluent Water by the Steam Method (K voprosu obesfenolivaniya stoknykh vod parovym metodom)

PERIODICAL: Koks i Khimiya, 1957, No.12, pp. 44 - 45 (USSR).

ABSTRACT: Some remarks on the previously published paper of A.M. Grinberg on the subject (Koks i Khimiya, 1957, No.3) are given. It is pointed out that the efficiency of dephenolising on the Dneprodzerzhinsk Works sharply increased when the filling of the absorber was changed from coke to metal rings (from 65.5% to 82%); moreover, it was established that 4 and 9% of free alkali give the same result in the removal of phenols. There is 1 table.

ASSOCIATION: Dneprodzerzhinskiy koksokhimicheskiy zavod (Dneprodzerzhinsk Coke-chemical Plant).

AVAILABLE: Library of Congress  
Card 1/1

AUTHORS: Shimko, Ye.M. and Kostroma, G.N.

SOV/68-59-1-11/26

TITLE: On the Problem of Coefficients of Recovery and Processing of Crude Benzole (K voprosu koeffitsiyentov ulavlivaniya i pererabotki syrogo benzola)

PERIODICAL: Koks i Khimiya, 1959, Nr 1, pp 41 - 42 (USSR)

ABSTRACT: A comparison of benzole losses of the below plant before and after the transfer of the benzole recovery shop to creosote oil and improved cooling of the absorption oil is given (Table 1). It is pointed out that although benzole losses were decreased, the yield of benzole per ton of coal remained unchanged (at the same composition of the coal blend). A similar comparison of the yield of pure products (Table 2) indicated that the yield of pure products increased by about 2% with a simultaneous decrease in the yield of solvent naphtha. The losses of solvent naphtha are calculated on a difference between the amount of this component which can be obtained on the bases of analysis and the amount of the product actually produced. As the methods of analysis of the raw benzole (the amount distilling off to 180 °C) were changed during the period and the latest method ChMTU 10108-55 gave results lower than those obtained on the plant, the authors conclude

Card1/2

SOV/68-59-1-11/26

On the Problem of Coefficients of Recovery and Processing of Crude Benzole

that on processing losses of benzole increased and not of solvent naphtha. It is therefore proposed to replace the ChMTU standard method by a new one which will give results corresponding to the actual plant operation.

There are 3 tables.

ASSOCIATION: Dneprodzerzhinskiy koksokhimicheskiy zavod  
(Dneprodzerzhinsk Coking Works)

Card 2/2

TREKHDENOV, V.I.; SHIMKO, Yu.K.; TSUKKERMAN, L.P., retsenzent;  
NOVIKAS, M.N., inzh., red.; BOEROVA, Ye.N., tekhn.red.

[Platform passenger train indicator] Ukazatel' otpravleniya passazhirskikh poездов. Moskva, Transzheldorizdat,  
1963. 66 p. (MIRA 17:2)

SHIMKOV, M.I.

Yarn steaming in PK-1 and PK-6 apparatus. Tekst. prom. 18 no.2:  
60-61 F '58. (MIRA 13:3)

1.Zaveduyushchiy otdelochnoy fabrikoy Chimkentskogo khlopchatobumazhnogo  
kombinata.  
(Textile finishing)

CZECHOSLOVAKIA / Human and Animal Morphology (Normal and S  
Pathological). Nervous System.  
Peripheral Nervous System.

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 16933

Author : Shimkova, Maria

Inst : Not given

Title : The Study of Innervation of the Cornea by  
Means of Vital Staining After Some Injuries  
of the Eye

Orig Pub : Ceskosl. oftamol., 1958, 14, No 3, 190-194

Abstract : No abstract given

Card 1/1

SHIMKOVICH, A. A., Cand Tech Sci -- "Study of friction in roller bearings. (Experiments on the development of hydrodynamic theory of lubricating roller bearings.)" Khar'kov, 1961. (Min of Higher and Sec Spec Ed UkrSSR. Khar'kov Polytech Inst im V. I. Lenin) (KL, 8-61, 251)

- 339 -

SHIKOVICH, A.A.

Hydrodynamic theory of the lubrication of roller bearings. Doz. AM  
BSSR 4, no.12:510-522 D '60. (MI A 11:2)

1. Beloruskiy institut mehanizatsii sel'skogo khozyaistva. Pred-  
stavleno akademikom AM BSSR V.P. Severaenko.  
(Roller bearings)

SHIMKOVICH, V.V., inzh.

Mechanization of the operation of valves on water pipes in the United  
States. Vod.i san.tekh. no.2:36-38 P '63. (MIRA 16:2)  
(United States—Water—Distribution)

SHIMM VPK, V.V.

Control mechanisms for stop fittings in foreign oil-, gas-, and  
water pipes. Mash. i neft. otor. no. 9:41-43 '64.

(MIMA 17:11)

SHIMKOVICH, V.V., inzh.

Use of electric drive for controlling the shutting off and  
regulating equipment of water pipelines. Vod.i san.tekh.  
no.12:26-27 D '65. (MIRA 19:1)

SHMKOVITS, I.; SHISHKA, K.; GUPKA, M.; VOL'F, Yu.; SMERCHANESKIY, V.;  
SIM'ORER, M.

Functional parameters of an apparatus made in Czechoslovakia  
for artificial blood circulation. *Eksp.khir.i anest.* 6  
no.3:13-20 '61. (MIRA 14:10)  
(PERFUSION PUMP (HEART))

SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.; SHNORRER, M.

Experience acquired in surgery by the use of an artificial heart  
and lungs. Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz. SSSR  
10:13-23 '62. (MIRA 16:2)

(PERFUSION PUMP (HEART))  
(CARDIOVASCULAR SYSTEM—SURGERY)

SHIMKOVITS, I.; BOL'F, Yu.; SHISHKA, K.; GUBKA, M.; SMRECHANSKIY, V.;  
SHNORRER, M.; ZIMA, P.

Apparatus fo Czech design for artificial blood circulation.  
Trudy Inst.eksp.i klin.khir.i gemat. AN Gruz.SSR 10:25-34  
'62. (MIRA 16:2)  
(CZECHOSLOVAKIA--PERFUSION PUMP (HEART))

SMRECHANSKIY, V.; SHISHKA, K.; SHIMKOVITS, I.; SHNORRER, M.; GUHKA, M.

Some perfusion problems in artificial blood circulation. Trudy  
Inst.eksp.i klin.khir.i genat. AN Gruz.SSR 10:35-42 '62.  
(MIRA 16:2)

(PERFUSION PUMP (HEART))

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKY, V.; SHNORRER, M.

Protection of the myocardium during the prevalence of asystole  
in an intracardiac operation by the use of the appaprtus for  
artificial blood circulation. Trudy Inst.eksp.i klin.khir. i  
gemat. AN Gruz.SSSR 10:57-65 '62. (MIRA 16:2)  
(HEART—SURGERY) (BLOOD —CIRCULATION,ARTIFICIAL)

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKIY, V.; SHNORRER, M.

Care of the patient following a heart operation with the use  
of artificial blood circulation. Trudy Inst.eksp.i klin.khir.  
i gemat. AN Gruz.SSR 10:67-72 '62. (MIRA 16:2)  
(HEART—SURGERY) (BLOOD—CIRCULATION, ARTIFICIAL)  
(POSTOPERATIVE CARE)

SHNORRER, M.; SHISHKA, K.; SHIMKOVITS, I.; GUBKA, M.; SMRECHANSKIY, V.

Changes in coagulation and anticoagulation factors of the blood  
in artificial blood circulation. Trudy Inst.eksp.i klin.khir.  
i genat. AN Cruz.SSR 10:73-76 '62. (MIRA 16:2)  
(BLOOD—COAGULATION) (BLOOD—CIRCULATION, ARTIFICIAL)

GUBKA, M.; SHISHKA, K.; SHIMKOVITS, I.; SMRECHANSKIY, V.; SHNORER, M.

Protection of the myocardium in cardiac arrest during intracardiac interventions with artificial circulation. *Khirurgia* 38 no.5: 17-25 My '62. (MIRA 15:6)

1. Iz otstreleniya eksperimental'noy khirurgii (zav. - akad. K. Shishka) Instituta eksperimental'noy meditsiny Slovatskoy akademii nauk.

(HEART, FAILURE) (HEART--MUSCLE)  
(BLOOD--CIRCULATION, ARTIFICIAL)

SHIMKUS, E.M.

Causes of the fuzzy kidney image in retropneumoperitoneum. Vest.  
rent. i rad. 36 no.6:67-69 N-D '61. (MIR 15:2)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - prof. P.P.TSarenko)  
Krymskogo meditsinskogo instituta (dir. - dotsent S.I.Georgiyevskiy).  
(KIDNEYS...RADIOGRAPHY) (PNEUMOPERITONIUM, ARTIFICIAL)

SHIMKUS, E.M., kand.med.nauk

Interureteral anastomosis in ectopia of the ureteral orifice.  
Urologiia no.6:56-57 '64. (MIRA 18:11)

1. Klinika fakul'tetskoy khirurgii (ispolnyayushchiy obyazannosti  
zavedyushchego - dotsent V.I.Solov'yev) Krymskogo meditsinskogo  
instituta, Simferopol'.

SHIMKUS, G.T.

Ecology and geographical distribution of wild clovers in the  
Crimea. Bot. zhur. 45 no.3:436-441 Mr '60.  
(MIRA 13:6)

1. Krymskiy gosudarstvennyy pedagogicheskiy institut im.  
M.V.Frunze, g.Simferopol'.  
(Crimea--Clover)

SHIMKUS, I. Yu.

SHIMKUS, I. Yu. --"Physicomechanical Properties of Marainic Sandy Loams Used in Foundations for Engineering Structures, in the Northeastern Part of the Lithuanian SSR." \*(Dissertations for Degrees in Science and Engineering Defended at USSR HIGHER Educational Institutions) Min of Higher Education USSR, Lithuanian Agricultural Acad, Kaunas, 1955

SO: Knizhnaya Letopis', No. 25, 18 Jun 55

\* For Degree of Doctor of Technical Sciences

KOCHEKOV, A.V.; BATURIN, G.N.; KOVALEVA, S.A.; YEMEL'YANOV, Ye.M.;  
SHIMKUS, K.M.

Uranium and organic matter in the sediments of the Black and  
Mediterranean Seas. Geokhimiia no.3:302-313 Mr '65. (MIRA 18:7)

YEMEL'YANOV, Ye.M.; SHIMKUS, K.M.

Study of the variability of deep-sea sediments in the Black  
Sea. Okeanologija 2 no.6:1040-1049 '62. (MIRA 17:2)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel's-  
kaya stantsiya Instituta okeanologii AN SSSR.

YEMEL'YANOV, Ye.M.; SHIMKUS, K.M.

Recent data on deep-sea Neo-Euxinic deposits of the Black Sea.  
Okeanologiya 3 no.3:482-494 '63. (MIRA 16:8)

1. Chernomorskaya eksperimental'naya nauchno-issledovatel'skaya  
stantsiya Instituta okeanologii AN SSSR.  
(Black Sea—Deep-sea deposits)

SHIMKUS, V. M.

Cand Med Sci - (diss) "Pneumoretroperitoneum in diagnostics of kidney disorders." Simferopol', 1961. 15 pp; (Khar'kov State Med Inst); 200 copies; price not given; (KL, 6-61 sup, 242)

SHIMKUS, Ye.M.

Replacement of part of the ureter by a loop of the small intestine.  
Urologia 24 no.6:50-51 '59. (MIRA 13:12)  
(INTESTINES--TRANSPLANTATION) (URETER--SURGERY)

JURGY TURAI, G.S. (Jurevicius, G.); VYRAYVICIUS, E.Yu. (Jurevicius, E.);  
JURGY TURAI, G.S. (Jurevicius, G.); VYRAYVICIUS, E.Yu. (Jurevicius, E.);  
SHIMKAVICHYUTE, G.S. (Shimkavichite, G.).

Pollution of the lower Nemunas by waste waters from the pulp and  
paper industry. Trudy AN Lit.SSR. Ser. 8 no.3:121-131 '65.  
(MIRA 19:1)

1. Lietuvos prienai i žmogaus sveikatą. Mokslo Darbai AN Litovskoy SSR.  
Vilnius, 1965.

SHIMMEL', N.

The fruit of American occupation. Sov. profsoiuzy 7 no. 4:60-  
63 Fe '59. (MIRA 12:5)  
(Korea, South--Economic conditions)

PARFENOV, V. V.; LOBANOV, Yu. A.; SHIMOLIN, L. V.

Investigating the law of magnetization approaching saturation  
in specimens made of fine ferromagnetic powders. *Fiz. met. i  
metalloved.* 14 no.4:503-511 0 '62. (MIRA 15:10)

1. Ural'skiy gosudarstvennyy universitet imeni A. M. Gor'kogo.  
(Magnetization) (Metal powders--Magnetic properties)

SHIMON, Aleksandr Alekseyevich; VINOGRADOV, V.L., red.; YELAGIN, A.S.,  
tekhn.red.

[Technical means for cultural and educational work; textbook for  
the schools for community center employees] Tekhnicheskie  
sredstva kul'turno-prosvetitel'noi raboty; uchebnik dlja kul'turno-  
prosvetitel'nykh shkol. Moskva, Izd-vo "Sovetskaja Rossija,"  
1959. 245 p. (MIRA 13:5)  
(Electric apparatus and appliances) (Community centers)

SHIMON, Alexander Alekseevich; KOBELIOVA, I.M., red.

[Technical means of cultural and educational work; a  
textbook] Tekhnicheskie sredstva kul'turno-prosvetitel'-  
noi raboty; uchebnik, Izd.2., ispr. i dop. Moskva,  
Sovetskaya Rossiia, 1964. 325 p. (MIRA 19:1)

SHIMON, K.

High Productivity of Labor as an Important Factor for the Fulfillment of  
the Production Program. Light Industry, #6:37:Jun 55

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549510014-1

SHEMON, K.

New Rationalizations at the "Stind" Industrial Enterprise. Light Industry,  
#6:40:Jun 55

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549510014-1"

SHIMON, Kalman [Simon, Kalman], dip.gornyy inzhener, dip.inzhener ekonomist

Some economical questions of longwall working. Izvestiia Bany KI  
no.5:1-8 '61.

COUNTRY	: Bulgaria	H-23
CATEGORY	:	
ABS. JOUR.	: RZKhim., No. 16 1959, No.	58857
AUTHOR	: Shimon, Kh.	
INST.	: Not given	
TITLE	: Improving the Packaging of Canned Goods	
ORIG. PUB.	: Knraniteina Promishlenost, 7, No 10, 39 (1958)	
ABSTRACT	: The author describes a new process for the sealing of glass jars with pear preserves and jellies in which the neck of the jars is partially filled; a new corrugated paper container with nests for the jars is also described.	
A. Marin		
CARD: 1/1		
356		

24,3500 (1137,1138)

34433  
S/185/61/006/006/011/030  
D299/D304

AUTHORS: Zapisochnyy, I.P., Kyshko, S.M., Shevera, V.S.,  
Fel'tsan, P.V., and Shimon, L.L.

TITLE: Spectroscopic investigation of excitation functions  
of atoms and molecules

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 6, 1961,  
770 - 773

TEXT: The experimental apparatus included a spectral device for  
separating the lines and bands, an electrophotometer with a photo-  
multiplier, and tubes filled with gas and vapor. The experimental  
apparatus was described in detail in the references. It is noted  
that recording devices of high sensitivity were required; this was  
achieved by using a photomultiplier with a d.c. amplifier instead  
of a photographic plate. Another requirement which had to be met  
was homogeneity of the electron beam. In the references it was  
found that among secondary processes which cannot be neglected,  
cascade transitions have a considerable effect on the spectral li-  
nes of atoms. This fact was confirmed by the present investigation,  
Card 1/3

S/185/61/006/006/011/030  
D299/D304

Spectroscopic investigation of ...

conducted by the method of electron collisions. The excitation functions of cadmium-, sodium- and neon atoms were studied in detail, as well as those of diatomic nitrogen molecules and of nitric oxide and carbon monoxide. The measurements were conducted in the visible region of the spectrum, and for cadmium in the ultraviolet. A figure shows the following excitation functions of atoms: Na ( $\lambda = 5890, 5896 \text{ \AA}$ ), Ne ( $\lambda = 5852 \text{ \AA}$ ) and Cd ( $\lambda = 5086 \text{ \AA}$ ). The investigated excitation function are characterized by the presence of several maxima, i.e. by fine structure (mainly due to the cascade transitions). The following excitation functions of diatomic molecules were investigated: of the second positive system of N<sub>2</sub> molecules and of the Angstrom system of CO molecules, of the negative system N<sub>2</sub><sup>+</sup>, of the comet system CO<sup>+</sup>, and of a NO<sup>+</sup> system. A figure shows the excitation functions of the band of the second positive N<sub>2</sub> system, of the CO<sup>+</sup> system and of the NO<sup>+</sup> system, for electron energies between 10 and 150 ev. Whereas the excitation functions of bands of neutral molecules are of ordinary shape, those of molecular ions are of a complex structure, i.e. have several maxima. The most likely reason for the complex structure are

Card 2/3

S/185/61/006/006/011/030  
D299/D304

Spectroscopic investigation of ...

elementary processes of dissociation and ionization of molecules, followed by recombination; the latter leads to a jumplike increase in the concentration of the ionic state. Such an interpretation of fine structure is supported by additional facts. Another figure, showing the excitation function of the  $N_2^+$  band, illustrates the contribution due to the elementary processes, for various electron energies. There are 3 figures, 1 table and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc (in translation).

ASSOCIATION: Uzhhorods'kyy derzhuniversytyet (Uzhhorod State University)

X

Card 3/3

L 16156-63

EMF(q)/EMT(n)/BDS AETTC/ASD JD:

ACCESSION NR: AR3005152

S/0058/63/000/006/D020/DX20

55

SOURCE: RZh. Fizika, Abs. 6 D121

AUTHORS: Shimon, L. L.; Zapesochnyy, I. P.

TITLE: Excitation functions of certain lines of cesium 27

CITED SOURCE: Dokl. i soobshch. Uzhgorodsk. un-t, Ser. fiz.-matem. i istor. n., no. 5, 1962, 44-46

TOPIC TAGS: cesium, excitation function, fine structure

TRANSLATION: The course of the excitation-curves for individual components of cesium line groups is studied at a pressure  $4.2 \times 10^{-4}$  mm Hg. The excitation-function curves of the principal-series doublet 4555 and 4593 Å are very close, as are also the curves of the excitation functions of the sixth term of the diffuse series 5466 ( $2^2P_{1/2}-8^2D_{3/2}$ ) and 5635 Å ( $2^2P_{3/2}-8^2D_{5/2}$ ). The excitation functions of the higher terms of the different series are very similar to one another. The resonance line has a very broad maximum, the other lines have a narrower one.

DATE ACQ: 15Jul63

SUB CODE: PH

ENCL: 00

Card 1/1

21.460  
S/058/62/000/005/027/136  
A061/AIC1

AUTHORS: Shimon, L. L., Zapesochnyy, I. P.

TITLE: A photoelectric study of the excitation function of the sodium resonance doublet

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 16, abstract 6V98  
("Dokl. i soobshch. Uzhgorodsk. un-t. Ser. fiz.-matem. n.", 1961,  
no. 4, 46 - 48)

TEXT: Results of the measurement of the excitation function of the Na resonance doublet, conducted under clearer conditions of excitation (lower vapor pressures  $P$  and current density  $j$ ) than those of previous investigations, are presented. The measurement conditions were as follows:  $P = 2 \div 10 \cdot 10^{-4}$  mm Hg,  $j = 0.3 \div 0.5$  ma/cm<sup>2</sup>, velocity spread of electrons  $\Delta V = 0.6 \div 0.7$  v. Four steps at 3.6; 4.1; 5.0, and 5.5 v were established on the ascending part of the curve. This points to the existence of a fine structure for the excitation function of Na. On an increase of pressure, the curve maximum at  $4 \cdot 10^{-4}$  mm Hg and ~15 v shifted toward low potentials in some contradiction with Haft's (Z. Phys., 1933, v. 82, 73) findings.  
[Abstracter's note: Complete translation]  
Card 1/1

VA

s/051/62/013/005/001/017  
E032/E314

AUTHORS: Zapesochnyy, I.P. and Shimon, L.L.

TITLE: A study of the optical excitation functions of sodium  
by the photoelectric method

PERIODICAL: Optika i spektroskopiya, v. 13, no. 5, 1962,  
621 - 625

TEXT: It is noted that the excitation functions of alkali  
metals have not been extensively investigated. It has been shown  
in a previous paper (I.P. Zapesochnyy, Vestn. LGU, no. 11, 67,  
1954) that it is necessary to use low pressures and low current  
densities to reduce to a minimum distortion of the present excitation  
curve by extraneous effects. The aim of the present work was to  
investigate the optical method in the visible part of the spectrum, with  
particular attention to the resonance doublet of sodium. Prelim-  
inary results have been briefly reported elsewhere (Dok. i soobshch.  
Uzhgorodskogo un-ta, ser. fiz.-mat. nauk, no. 4, 46, 1961) by the  
present authors. The method and apparatus employed were largely  
similar to those described in the first reference mentioned above.

Card 1/4

S/051/62/013/005/001/017  
E032/E314

A study of ....

The excitation chamber was made of molybdenum glass and was heated electrically to obtain the necessary vapour pressure of sodium. The spectral lines were recorded by the  $\Phi\beta\gamma$ -17 (FEU-17) photomultiplier and the YM-2 (UM-2) monochromator was used as the spectral instrument. Preliminary experiments showed that the oxide-coated cathode, used to produce the electron beam, operated satisfactorily only when the sodium vapours were exceedingly pure and this was achieved by multiple vacuum distillation.

Examination of the excitation function for the resonance lines 5890/5896 Å of sodium showed that they had a very flat maximum between 8 and 15 V. It was found that the present results were somewhat different from the experimental data of Haft (Zs.Phys., 82, 73, 1933) and quite different from the theoretical points of Vel'dre (Vestnik AN Latv. SSR, no. 5, 106, 1956). Fig. 2 shows the initial part of the excitation curve for the above resonance line. This part of the curve was examined very carefully, using a mono-energetic beam in which 90% of the electrons had a velocity spread of not more than 0.6 eV (indicated by the volt.-amp. characteristic of the beam and its differential curve

Card 2A

A study of ....

S/051/62/C13/005/001/017  
EO32/E314

shown in Fig. 2 below the resonance curve). As can be seen, this part of the resonance curve has a fine structure: there are definite breaks in the curve at 2.9, 4, 4.9 and 5.4 eV. More mono energetic beams will be necessary to resolve this fine structure. Next, a study was made of the effect of pressure and the electron current density on the form of the excitation function for the above doublet. It was found that points obtained at  $2.5 \times 10^{-4}$  and  $5 \times 10^{-4}$  mm Hg lay on the same curve but points obtained at  $10^{-3}$  mm Hg fell on a different curve. Similarly, points obtained at current densities of  $1.5 \times 10^{-4}$  and  $3.6 \times 10^{-4}$  A/cm<sup>2</sup> were found to lie on the same curve, while experimental points obtained at  $10^{-3}$  A/cm<sup>2</sup> no longer did so. Thus, pressures much less than  $10^{-3}$  mm Hg and electron current densities not exceeding  $5 \times 10^{-4}$  A/cm<sup>2</sup> must be used to obtain the correct form of the excitation function. An investigation was also made of the excitation functions of the lines 5149/54, 5683/88 and 4979/83 Å. It was found that the excitation functions for lines belonging to Card 3/4

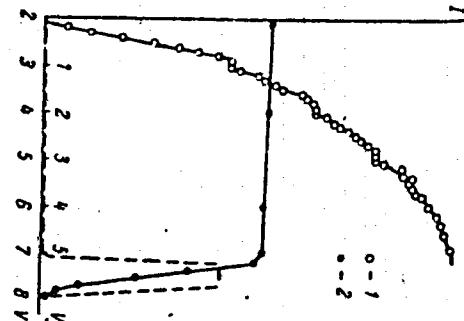
A study of ....

S/051/62/013/005/001/017  
E032/E314

different series are of a different form. A fine structure was found for 5683/88 and 4979/83 Å. It is concluded that to obtain a correct explanation of the nature of the fine structure, similar measurements should be carried out with other alkali metals, using more mono-energetic electrons. There are 5 figures.

SUBMITTED: October 3, 1961

Fig. 2:



Card 4/4

6. 1058/63/000/011/0026/0026

SOURCE Ref. zh. Fizika, Abs. 11D193

AUTHOR Shamon, L. L.

TOPIC MEASURES THE EXCITATION FUNCTIONS OF CERTAIN POTASSIUM SPARK LINES

PERIODICAL: Zh. Tekh. Fiz., Zap. Ural'sk. Univ., v. 49, 1962, 51-58

TOPIC TAGS excitation function, excitation cross section, potassium spark line

TRANSLATION: Measures the excitation functions of 6 K lines: 4388, 4466, 4505, 4520, 4530, 4540. Describes the device and operation of the atomic excitation source. The results are compared with those obtained previously by Volkovay (Journal of Physics, v. 10, p. 101, 1959).

SUB CODES: NF

DATE: 00

Card 1/1

SHIMON, L.L.

Effective cross sections of the excitation of some potassium  
spark lines. Nauk. zap. UzhGU 49:51-58 '62. (MIRA 18:2)

L 18151-63

EWP(q)/EWT(m)/BDS

AFFTC/ASD

JD/JG

S/0048/63/027/008/1037/1039

ACCESSION NR: AP3004495

59  
56AUTHOR: Zapesochny\*y, I.P.; Shimon, L.L.TITLE: Excitation functions for some alkali metal atoms /Report presented at the  
Second All-Union Conference on the Physics of Electronic and Atomic Collisions held  
in Uzhgorod 2-9 Oct 1962/SOURCE: AN SSSR, Izvestiya, ser.fiz., v.27, no.8, 1963, 1037-1039TOPIC TAGS: excitation function , electron impact, spectrum line , Na, Rb, Cs

ABSTRACT: Hitherto certain experimental difficulties have hindered systematic investigation of the excitation cross sections and functions of alkali metal atoms. The purpose of the present work was systematic investigation of excitation of sodium, rubidium and cesium by electron impact, using photoelectric recording of the weaker lines, since this is more sensitive than photographic recording. The experimental set-up has been described earlier (I.P.Zapesochny\*y, Vestnik Leningrad un-ta., No.11, 1954). The line radiation was detected by means of cooled photomultipliers. The vapor pressure interval and electron density were selected to minimize their distorting effects. Particular attention was given to insuring a monoenergetic beam; the energy straggling did not exceed 0.5-0.8 eV. Some of the results are

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presented in Figs.1,2,3 and 4 (Enclosures). The excitation functions for the resonance (principal series) lines are similar (Fig.1) and have a broad peak. The sharp series excitation functions have sharp peaks and are also similar, except that the curve for Cs has an additional minor peak. The diffuse line series functions differ: the Na curve has a wide peak; Rb and Cs much narrower peaks. It also follows from the experimental results that the excitation functions for the components of a spectral doublet are virtually identical, even though different upper or lower levels may be involved. The excitation functions for rubidium were obtained in the present study for the first time. Orig.aft.has: 4 figures.

ASSOCIATION: Kafedra optiki Fiziko-matematicheskogo fakul'teta Uzhgorodskogo gos. universiteta (Chair of Optics, Dept.of Physics & Mathematics, Uzhgorod State Univ.)

SUBMITTED: 00

DATE ACQ: 26Aug63

ENCL: 03

SUB CODE: PH

NO REF SOV: 004

OTHER: 003

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L 18151-63  
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ENCLOSURE: 01

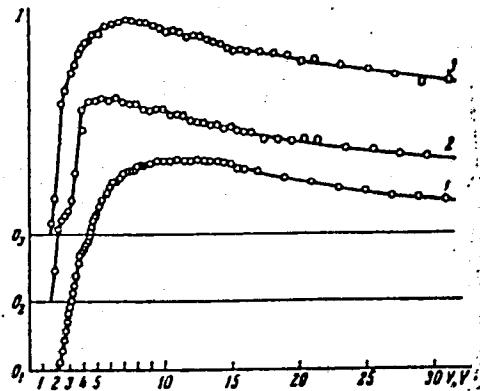


Fig.1. Excitation functions of the principal (resonance) lines: 1 - Na 5890/96 Å, 2 - Rb 7800 Å, 3 - Cs 8521 Å.

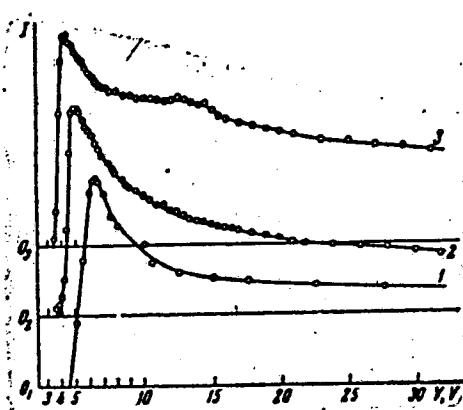


Fig.2. Excitation functions of the sharp series lines: 1 - Na 5133 Å, 2 - Rb 6159 Å, 3 - Cs 6586 Å.

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ENCLOSURE: 02

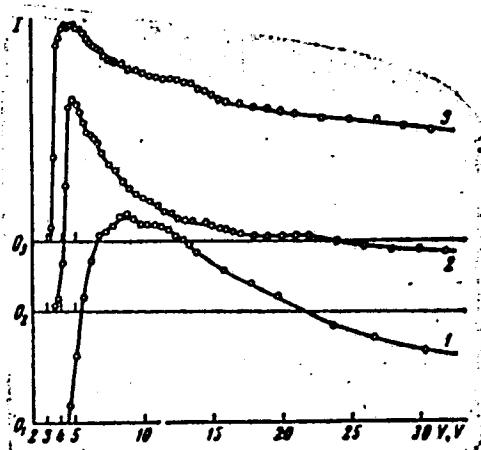


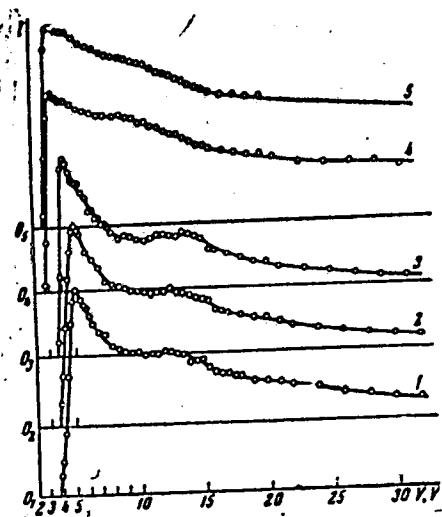
Fig. 3. Excitation functions of the diffuse series  
lines: 1 - Na 4982/78 Å, 2 - Rb 6299 Å, 3 - Cs 6983 Å.

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ENCLOSURE: 03

Fig. 4. Excitation functions of cesium lines: 1 & 2 - components of the sixth member of the diffuse series: 5635 & 5466 Å; 3 - fourth member of the sharp series: 5746 Å; 4 & 5 - components of the second doublet of the principal series: 4555 & 4593 Å.



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ACCESSION NR: AP4039699

6/0051/64/016/006/0929/0935

AUTHORS: Zapesochny\*<sup>y</sup>, I. P.; Shimon, L. L.

TITLE: Excitation functions of cesium spectral lines

SOURCE: Optika i spektroskopiya, v. 16, no. 6, 1964, 929-935

TOPIC TAGS: cesium, spectral analysis, spectrum line, excitation spectrum, line spectrum, doublet splitting

ABSTRACT: The excitation functions of 25 lines belonging to the principal, sharp, diffuse, and fundamental series of the cesium atom were investigated by means of a setup essentially similar to that described by the authors earlier (Vestn. LGU, no. 11, 67, 1954 and Naukovi zapysky UzhDU, no. 39, 49, 1962), using photoelectric recording of the weak intensities. The tests were made at low vapor pressure and at low density of the exciting monokinetic electrons. The excitation functions of each investigated line were measured

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several times with several different variants of tube and electrode configurations. The beam of exciting electrons was perpendicular to the entrance slit of the monochromator in some tests and parallel in others, the results being practically the same, so that only data with perpendicular orientation are reported. The laws governing the behavior of the excitation functions of the lines in each series are established. Secondary maxima were obtained for the excitation functions of resonance lines. No difference was observed in the behavior of the excitation functions of the doublet components. Some peculiarities in the excitation functions of the fundamental series suggest that cascade transitions from the F levels to the lower D levels and then to the resonance P levels of cesium may cause an anomalous behavior of the excitation functions of the resonance doublet. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

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SUBMITTED: 18Apr63

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NR REF SOV: 006

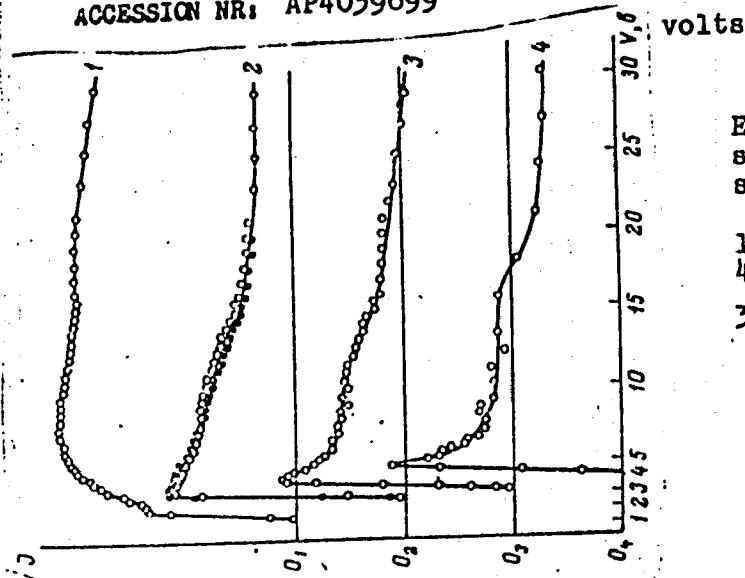
OTHER: 002

Card

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ACCESSION NR: AP4039699

ENCLOSURE: 01



Excitation functions of  
spectral lines of principal  
series.

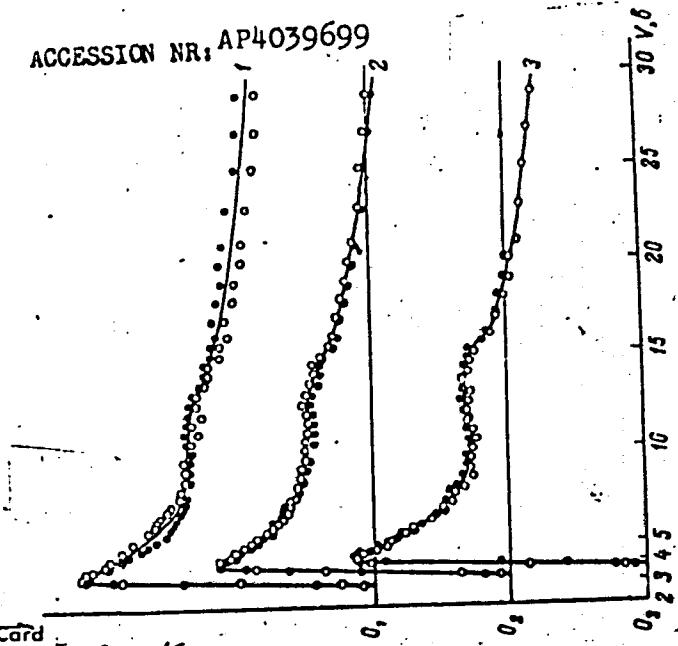
1 -  $8521 \text{ \AA}$ ; 2 -  $4555$  and  
 $4593 \text{ \AA}$  (black circles);  
3 -  $3876 \text{ \AA}$ ; 4 -  $3611 \text{ \AA}$ .

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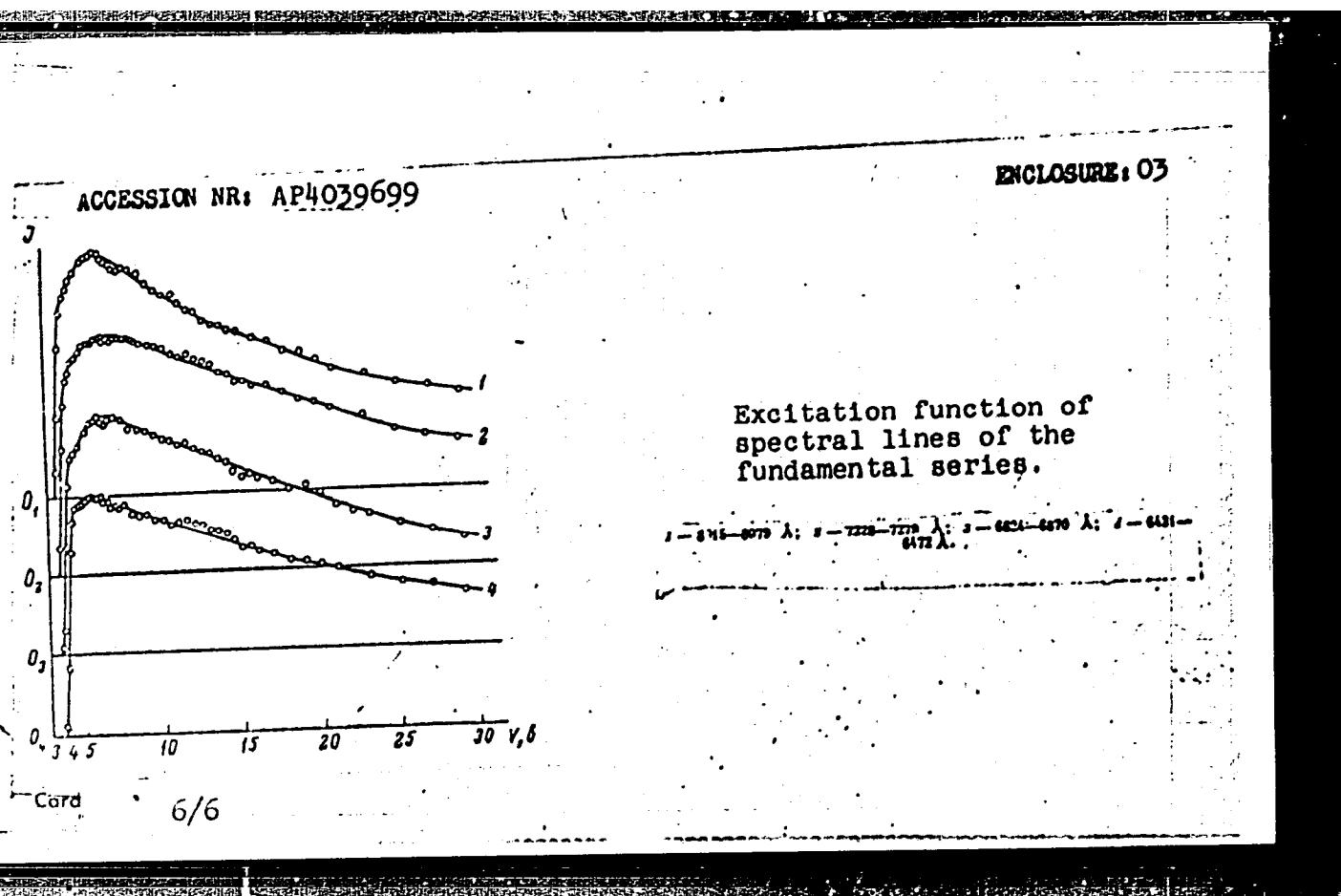
ACCESSION NR: AP4039699

ENCLOSURE: 02



Excitation functions of  
spectral lines of sharp  
series.

1 - 7609 (black circles)  
and 7944 Å; 2 - 6354 Å  
(black circles) and 6586  
Å; 3 - 5568 (black circles)  
and 5746 Å.



S/0051/64/017/001/0024/0029

ACCESSION NR: AP4042978

AUTHOR: Shimon, L. L.

TITLE: Excitation functions of rubidium spectral lines

SOURCE: Optika i spektroskopiya, v. 17, no. 1, 1964, 24-29

TOPIC TAGS: spectrum line, rubidium, excitation spectrum, alkali metal, atomic spectrum, ionization spectrum

ABSTRACT: The experimental setup and the procedure are the same in this work as in earlier studies (with I. P. Zapesochny\*<sup>y</sup>, Opt. i spektr. v. 13, 621, 1962 and v. 16, 929, 1964) devoted to the excitation functions of sodium and cesium, using a highly monokinetic electron beam and photoelectric recording. A total of twenty lines of the principal and secondary series were studied, along with the excitation functions of 10 ion lines of rubidium. The rubidium vapor pressure (0.0002--0.00065 mm Hg) and electron current densities

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(0.0002x--0.0008 A/cm<sup>2</sup>) were low enough to exclude the effect of these quantities on the course of the excitation functions. As in other alkali-metal atoms, the resonance-line excitation function exhibits a broad maximum, which narrows appreciably on going to the next terms of the principal series. A distinct difference is established between the form of the excitation functions of atomic lines and lines emitted by singly charged ions. The identity of the excitation functions of doublet components, previously established for cesium, is confirmed also for rubidium. Secondary maxima are observed on the rising part of the resonance-line excitation function. A table of the level transitions is included. "The author thanks I. P. Zapesochny\* for suggesting the topic and for continuous interest." Orig. art. has: 6 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 21Oct63

ENCL: 00

2/3

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SUB CODE: OP NR REF SOV: 006 OTHER: 000

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L 9195-66 EWT(1)/EWT(m)/EWP(b)/EWP(t) LIP(c) JD/JG  
ACC NR: AR6000113 SOURCE CODE: UR/0058/65/000/008/D023/D023

SOURCE: Ref. zh. Fizika, Abs. 8D182

AUTHORS: Zapesochnyy, I. P.; Shimon, L. L.

ORG: none

TITLE: Excitation function of spectral lines of rubidium and cesium

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR. M., t. 2, vyp. 1, 1964, 175-179

TOPIC TAGS: rubidium, cesium, light excitation, spectral line, excitation cross section

TRANSLATION: The electron-impact method and photoelectric registration are used to study the excitation functions of 25 spectral lines of Cs and 15 lines of Rb, belonging to the principal, secondary, and fundamental series. There is no great difference in the behavior of the excitation functions of the lines of the principal and secondary series which are characterized by a sharp growth of the effective cross section of excitation and the presence of a sharp maximum at a distance of approximately 1 volt beyond their excitation potential. The excitation function of the fundamental series is characterized by rounded maxima which lie several volts beyond the excitation potentials. The excitation functions of the resonant lines have an anomalously broad maximum (relative to the other lines). A fine structure was observed from the rising part of the curves.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000

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